

5 We claim:

1. A tire valve stem cap incorporating a visible air pressure indicator, said cap comprising:

a hollow outer tube having a closed transparent upper end and open lower end;

a stem connector for attachment at one end to an existing tire valve stem, said stem

10 connector being sized for a close fit in the open end of said outer tube;

an indicator comprised of a head conforming to the closed transparent upper end of said outer tube and visible there through, and a body protruding therefrom, said indicator further having a central air passage through the head and body, said indicator being slidable within said outer tube from an up to a down position;

15 a compression spring encircling said indicator for biasing said indicator toward said up position;

whereby when said tire valve stem cap is engaged on an existing tire valve stem, pressurized air from said tire passes from said tire stem valve through said indicator central air passage to maintain said indicator in equilibrium in said down position against the bias of said spring, but if air pressure in the tire drops below a calibrated level the excess spring bias of said spring will cause said indicator to pop up and become visible inside said transparent end of said outer tube.

2. The tire cap according to claim 1, wherein said central through bore of said stem  
25 connector is threaded for screw attachment to said tire valve stem.

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3. The tire cap according to claim 1, further comprising a collar attached inside the lower open end of said outer tube and around said stem connector; said collar sized for a close friction fit around said stem connector and for insertion into and attachment to said outer tube lower end.

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4. The tire cap according to claim 3 wherein said lower end of said outer tube is further comprised of an internal annular channel and said collar is comprised of a corresponding annular ring for attaching said outer tube onto said collar.

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5. The tire cap according to claim 3, wherein said collar and said lower section of said outer tube are threaded for screw attachment.

6. The tire cap according to claim 1, wherein said spring is a compression spring.

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7. The tire cap according to claim 6, wherein said compression spring has a predetermined compression force.

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8. The tire cap according to claim 7, wherein said indicator head is further defined by a lateral annular groove in order to form a spring bias collar to anchor said spring and to seat a first O-ring to create the upper seal space.

5           9. The tire cap according to claim 8, wherein said indicator body is further defined by a lateral annular groove for seating a second o-ring and said end fitting further comprises of a plurality of bleed ports corresponding in position to said second o-ring such that when said indicator is fully engaged (seated) in said end fitting the bleed ports are sealed, preventing pressurized air from entering the space beneath the spring bias collar, and when air pressure falls  
10 below said calibrated level the indicator slides upward, allowing pressurized air to pass through said bleed ports and creating an additional upward force beneath said collar causing said indicator to pop up.

          10. The tire cap according to claim 1, wherein said indicator head is brightly colored to be  
15 clearly visible through the transparent upper section of the outer tube when popped up.

          11. The tire cap according to claim 1, wherein said transparent end of said outer tube is hemispherical for receiving a hemispherical indicator head and for providing 360 degree visibility when said indicator is popped up.

20           12. The tire cap according to claim 12, wherein said hemispherical indicator head further comprises a flat top having a plurality ribs for maintaining a clearance against the hemispherical transparent end of said outer tube.

25           13. The tire cap of claim 1, wherein said stem connector is further comprised of a hexagonal outer surface for easy wrench tightening.

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14. A tire valve stem cap incorporating a visible air pressure indicator, said cap comprising:

10 An indicator, a spring and a stem connector end fitting housed within a hollow outer tube having a closed transparent upper end and open lower end; said transparent end having a first sealed space;

a stem connector for attachment at one end to an existing tire valve stem and at an opposing end to said end fitting, said stem connector and end fitting each having central through bores;

15 said indicator comprised of a head, body and ferrule, shaped and sized for slideable operation in the end fitting and outer tube; said indicator further having a central air passage with a plurality of entrance apertures in the ferrule and an exit aperture, leading to the first seal space, in the head;

a bias spring anchored between said end fitting and indicator head, said spring for sliding  
20 said indicator away from said end fitting towards said transparent end;

whereby when said cap is engaged on an existing tire valve stem, pressurized air from said tire passes from said tire stem valve through said indicator central air passage and into said first sealed space forcing said indicator in a normally closed (down position) equilibrium against the spring bias of said spring, but if air pressure in the tire drops below a calibrated level the  
25 excess spring bias of said spring will cause said indicator to pop up and become visible inside said transparent end of said outer tube.

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15. The tire cap according to claim 14, wherein said central through bore of said stem connector is threaded for screw attachment to both said end fitting and said tire stem.

10 16. The tire cap according to claim 15, wherein said end fitting is a cylindrical body having an larger diameter upper section and a smaller diameter lower section, for slideably receiving the body and ferrule of the indicator, respectively, and wherein the junction between the upper an lower section is further defined by an annular upper hub with a radial flange for anchoring said spring and said lower section has a threaded outer surface for screw attachment to said stem connector.

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17. The tire cap according to claim 14, wherein a collar is slideably disposed around said stem connector; said collar sized for a close friction fit around said stem connector and for insertion into and attachment to said outer tube lower end.

20 18. The tire cap according to claim 13, wherein said spring is a compression spring having a predetermined compression force.

25 19. A tire valve stem cap incorporating a visible air pressure indicator comprising:  
an outer tube having a transparent hemispherical end;  
an annular stem connector for attachment to an existing tire valve stem, said stem connector having an air passage there through;

5           a stem connector end fitting attached to said stem connector, said stem  
connector having an air passage there through;

          an indicator having a hemispherical head for slidable operation in the outer tube, said  
indicator having an air passage there through;

10           a compression spring biasing said indicator away from said stem connector end fitting;

          whereby air pressure from said existing tire valve stem passes through all of said air  
passages and forces maintains said indicator in normally closed equilibrium against the fore of  
said compression spring 60.

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